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**Gruber et al.**

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(54) **TOPICAL COMPOSITION**

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(58) **Field of Classification Search**

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See application file for complete search history.

(56) **References Cited****U.S. PATENT DOCUMENTS**

4,721,096 A	1/1988	Naughton et al.
4,963,489 A	10/1990	Naughton et al.
5,032,508 A	7/1991	Naughton et al.
5,160,490 A	11/1992	Naughton et al.
5,266,480 A	11/1993	Naughton et al.
5,460,939 A	10/1995	Hansbrough et al.
5,462,860 A	10/1995	Mach
5,516,532 A	5/1996	Atala et al.
5,559,022 A	9/1996	Naughton et al.
5,654,381 A	8/1997	Hrkach et al.
5,709,854 A	1/1998	Griffith-Cima et al.

5,763,267 A	6/1998	Kurjan et al.
5,785,964 A	7/1998	Naughton et al.
5,843,766 A	12/1998	Applegate et al.
6,372,494 B1	4/2002	Naughton et al.
7,118,746 B1	10/2006	Naughton et al.
7,160,726 B2	1/2007	Mansbridge
8,138,147 B2	3/2012	Naughton et al.
8,361,485 B2	1/2013	Naughton et al.
2003/0198682 A1	10/2003	Gruber et al.
2003/0235559 A1	12/2003	Sobol et al.
2004/0001814 A1	1/2004	Cheung
2004/0253262 A1	12/2004	Cheung
2012/0230940 A1	9/2012	Naughton et al.

**FOREIGN PATENT DOCUMENTS**

JP 07010734 A	*	1/1995
WO WO 93/17669		9/1993
WO WO 94/25080		11/1994
WO WO 96/39101		12/1996
WO WO 98/52543		11/1998
WO WO 9949876 A2	*	10/1999
WO WO 00/69449		11/2000
WO WO 03/068161		8/2003

**OTHER PUBLICATIONS**

Abramovitch, R. et al., "Regulation of angiogenesis by hypoxic stress: from solid tumours to the ovarian follicle," *Int J Exp. Pathol.* 78(2):57-70 (1997).

Brigham, et al. "The Stumptailed Macaque as a Model for Androgenetic Alopecia: Effects of Topical Minoxidil Analyzed by Use of the Folliculogram," *Clin Dermatol.* 1988,6(4): p. 177-187.

Diani, et al., "Immunocytochemical Localization of Androgen Receptors in the Scalp of the Stumptail Macaque Monkey, a Model of Androgenetic Alopecia," *J Invest Dermatol.* 1994,102(4): p. 511-514.

Flax et al., "Engraftable human neural stem cells respond to development cues, replace neurons, and express foreign genes," *Nature Biotechnol.* 16:1033-1039 (1998).

Freshney, Culture of Animal Cells. A Manual of Basic Technique, 2d Ed., A.R. Liss, Inc., New York, 1987, Ch. 20, pp. 257-288.

Frisen et al., "Central nervous system stem cells in the embryo and adult," *Cell. Mod. Life Sci.*, 54:935-945 (1998).

Goey et al. "Inhibition of early murine hemopoietic progenitor cell proliferation after in vivo locoregional administration of transforming growth factor-beta 1," 1989, *J. Immunol.* 143: 877-880.

(Continued)

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(57) **ABSTRACT**

Compositions comprising metabolized conditioned growth medium and/or metabolized cell extract and methods of use are described. The metabolized conditioned growth medium and metabolized cell extract compositions may be formulated with an acceptable carrier into injectable or topical formulations, for example, as a cream, lotion or gel, and may be used in cosmeceutical or pharmaceutical applications. The metabolized conditioned growth medium and metabolized cell extract may also be further processed to concentrate or reduce one or more factors or components contained within the metabolized conditioned growth medium or metabolized cell extract. The growth medium may be conditioned by any eukaryotic cell. The metabolized conditioned growth medium and metabolized cell extract may be used to prevent or treat a condition, for example, a skin condition.